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Dear Sir

# RESPONSE TO OFGEM'S CONSULTATION DOCUMENT ON LOCATIONAL ENERGY MARKET DESIGN BY BANKS RENEWABLES

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## Background to Banks Renewables

Banks Renewables is part of The Banks Group, a family owned, Durham based business. "Development with Care" is our guiding philosophy across all our activities, and we work incredibly hard to ensure that communities in the areas where we have projects enjoy a positive experience through community engagement, responsible operating, and community support. This approach is embedded within our culture.

Banks Renewables are one of the leading independent renewable energy generators in the UK. The company currently operates ten onshore wind farms: 1) Armistead; 2) Hazlehead; 3) Heysham South; 4) Hook Moor; 5) Lambs Hill; 6) Marr; 7) Middle Muir; 8) Moor House; 9) Penny Hill and 10) Kype Muir. These ten wind farms provide over 222MW of renewable electricity generating capacity across Scotland and the north of England. In addition to the operational portfolio of wind farms, Banks Renewables has a large pipeline of wind, solar, battery and peaking plant projects in development.

For more information about Banks Renewables please see: https://www.banksgroup.co.uk/

## General Comments

Thank you for the chance to input.

Nodal pricing seems like a theoretical approach to a problem that is caused by the acceleration of grid decarbonisation without sufficient grid reinforcement. Due to the lack of detail of how nodal pricing would be implemented, limited specific feedback can be given until a more thorough and open analysis is provided to the industry.

The implementation of the change will have significant implications on the whole structure of the industry and is likely to pause investments in renewable generation projects required for Net Zero. The key inhibitors to reaching Net Zero are currently the lack of appropriate planning policy and proactive pre-emptive investment in grid infrastructure. Introduction of a new market regime may only further complicate the problem.

## 1. The key opportunities associated with introducing more granular locational pricing in GB.

- For Nodal pricing to be successful it needs to result in changes to locational decisions. Therefore, either:
    - higher levels of new generation located in the south AND / OR
    - relocation of existing / new demand in the north.

  If that is the case, HMG needs to accept a willingness to see significant differentials emerge in both wholesale and retail pricing – arguably with retail pricing exposed to the same pricing volatility as the wholesale market. In Banks view this does not feel like a positive outcome for social good. Is it credible to see significantly higher electricity bills in London and the Southeast than the rest of the country?

- Effective implementation of locational pricing could in theory reduce thermal constraint management costs by avoiding assets being turned down in the Balancing Mechanism (BM) and instead relying on local price signals (although Banks suspects the costs of implementation and market disruption will likely significantly outweigh these theoretical benefits). A large proportion of current constraint management costs are attributed to turning down subsidised wind in Scotland and North England. Developers have entered contracts in good faith with the UK Government with a contractual and commercial understanding that for every megawatt hour a generator could generate, it would, and it would receive its contractual entitlement under the appropriate price support mechanism. It is unclear how this would be dealt with under a locational pricing market; however, any undermining of the current commercial arrangement would likely face significant legal challenge and damage investor confidence.
- A locational pricing mechanism that effectively captures the cost of developing and maintaining the grid could potentially streamline the assessment of new grid investment, but it does not solve the main challenge of timely investment.
- The location of new renewable and nuclear generation is largely well known, therefore, pre-emptive investment in grid infrastructure to minimise constraint cost while meeting Net Zero

targets should be prioritised. It is well understood that the vast majority of new onshore wind generation will be located in Scotland, offshore wind will largely be off the eastern Scottish coastline and eastern English coastline, and due to the long lead times of nuclear, the specific plant locations will be known well in advance. Furthermore, it is well understood that over the coming decades, overall electrical energy demand in GB will increase significantly as will the required total generation capacity. As a result, there is essentially no risk that pre-emptive grid upgrades will not be utilised.

- Texas is given as an example where nodal pricing has been implemented effectively and beneficially. However, in these examples a key fact is omitted, and that is shortly before nodal pricing was introduced Texas implemented competitive renewable energy zones (CREZ) and invested $7 billion pre-emptively and proactively in strategic transmission upgrades that enabled 20GW of new renewable energy generation in remote west Texas[1].
- Banks has not seen any studies concluding that overall energy cost reductions in Texas have been a result of the nodal pricing model rather than just the grid infrastructure investment. The implementation of CREZ and transmission upgrades resulted in $1.7 billion in annual electricity production cost savings[1], demonstrating an economic benefit as well as an increase in renewable energy capacity. Texas can be considered analogously to the UK regarding its distribution of demand centres and remote renewable energy potential.
- It is our view that the resources of BEIS, Ofgem, NGESO, and the transmission owners should be spent on identifying where the most economic sources of renewable energy are and implementing pre-emptive transmission upgrades to enable that renewable energy to be deployed, instead of introducing disruptive market reform. This we see as the most effective way to maintain low energy costs whilst ensuring Net Zero targets are achieved.
- Deploying pre-emptive transmission upgrades would significantly alleviate the amount of intervention required by NGESO in its balancing interventions. Deploying complex nodal pricing will most likely take a decade to implement, and a further decade to send sufficient pricing signals to stimulate the grid investment most industry experts know is required to deliver Net Zero. HMG does not have the luxury of time if it is to achieve its Net Zero targets. Therefore, pre-emptive grid infrastructure investment is ultimately a far mor efficient and effective means of helping deliver Net Zero.
- More effective location of generation is often touted as a reason for locational pricing; however, Banks does not agree that locational pricing will achieve significantly more efficient locating of projects. Nodal market prices are unlikely to be a primary driver of project location. Research by the University of Alberta has shown that zonal pricing in Texas has not resulted in generation being located in regions where price signals would dictate[2]. Project location is primarily driven by where projects can gain planning permission, grid connection, and suitable resource for the project to operate, wind for wind farms, solar irradiance for Solar PV, and gas connections for gas assets. Furthermore, there are already pricing drivers (in the form of TNUoS and other grid charging) which strongly disincentivise the construction of wind farms in Scotland compared to England and Wales, however, due to planning restrictions, the vast majority of new wind farms in Britain are

[1] https://cleanenergygrid.org/texas-national-model-bringing-clean-energy-grid/
[2] David P. Brown, Jay Zarnikau and Chi-Keung Woo, *Does Locational Marginal Pricing Impact Generation Investment Location Decisions? An Analysis of Texas's Wholesale Electricity Market,* University of Alberta.

set to be built in Scotland. This further refutes the assumption that a locational pricing system will result in the location of generation nearer demand.

- In Banks' view, the relocation of demand under nodal pricing will be at best limited to relatively few energy intensive businesses. This will most likely have a negligible impact on the national energy demand balance.
- Locational pricing could make the investment case in new grid infrastructure more apparent, however work is needed to outline how long-term imbalances in energy prices between nodes would result in new investment, and how this investment and payback would be regulated.
- Under nodal energy pricing, nodal capacity markets may be required, mitigating the potential for volatility within a node and better matching of supply and demand capacity within a node.

## 2. The key implementation challenges, risks, and mitigations; and

- This is a fundamental change to the energy market and will present significant policy and technical challenges. The magnitude of these challenges may be relative to the level of deviation from the current market design. The scale of change and uncertainty this will drive should not be underestimated.
- A key risk Banks foresees with locational pricing is that of undermining investment in new renewable energy projects by dramatically increasing the revenue uncertainty. Pausing/slowing investment required to reach net zero. The project finance industry still carries significant scars from the introduction of NETA when several CCGT IPPs became distressed financially. Major banks will almost definitely pause future investment plans until they have gained a comprehensive understanding of what the trading arrangements mean, how the market behaves, and how subsidy regimes interact with those arrangements. Almost certainly, introducing nodal trading arrangements will see a significant pause in the emerging merchant market.
- If implemented, locational pricing must be met with corresponding changes to planning strategy and reform on investment on new grid infrastructure, specifically remove obstacles to the roll out of wind and solar in England. In Banks view, at best, locational pricing would have no impact on new generation location, but at worst, could result in increased investment in gas generation close to energy demand in England, counter to the UK Government's wider Net Zero and Energy Security Strategies.
- The more nodes, the greater the uncertainty. The smaller each node in the pricing model, the more impact a single demand/generation plant or grid issue will have on the pricing within that node. Higher revenue uncertainty will increase overall project risk and thereby increase the effective cost of capital and higher returns required by investors to invest in generation plants. This may lead to an increased cost to consumers in the long run. To mitigate this, if a locational pricing model is decided upon, Banks feels strongly that the model should have few nodes/zones.
- In relation to the above point, any reforms to the energy market should be sure not to undermine the UK's Net Zero targets by stymieing investment in renewable technologies. In a zonal pricing model, it is likely that during periods of high renewables generation, renewable assets in a zone behind a constraint (e.g. wind in Scotland) will be subject to negative pricing. In addition to the higher uncertainties in revenue, such a model would likely reduce the revenue captured by renewables projects relative to dispatchable plants. Given how challenging reaching Net Zero is

already set to be, disincentivising investment in renewables, even temporarily, may have a severe impact on the timeline for reducing the UK's carbon emissions. As indicated in question 1, Banks does not believe locational pricing will lead to an increased deployment of renewables nearer demand unless there is a significant change in the planning system.

- Further to the above points, the smaller a nodal market the more vulnerable it is to distortion from participants that have large amount of generation and demand side response assets within the node. Larger nodes would mitigate against any participant having significant market power.
- An overhaul to the energy market will risk further delaying reinforcements in grid infrastructure. Under all scenarios for the UK to reach Net Zero, the electrical grid will need significant expansion to accommodate the increased electrical demand. In Banks opinion, these reinforcements should be proactively implemented, and developed ahead of need in order to encourage investment. We are concerned that the nodal model would remove drivers, ownership, and responsibility for grid investment. Resources used to adopt nodal pricing could be better allocated to improving process for timely grid investment, with coordination between developers of renewable generation and grid operators.
- Mechanisms by which grid investment would be driven under a new energy market system appear to be reactive, and it is not clear how the process of making investment decisions in grid infrastructure will be different under this new market regime. This may lead to projects being further delayed while they wait for grid connection.
- Finally, in a Net Zero electricity system, energy must be generated where resource is available. Locational pricing therefore benefits consumers of energy who are located close to renewable resources. However, cities, towns and settlements in the UK are not located based on renewable resource, a situation which is unlikely to change in the future. Locational pricing could therefore result in an unfair inequality being imposed on individuals, with widely differing energy prices for different people within the country, for reasons that are largely out of their control.

## 3. The proposed approach to modelling zonal and nodal market designs.

In general, Banks is not in favour of overhauling the energy market design into a zonal or nodal pricing model. We believe the concerns highlighted above will result in significant cost of implementation, fail at solving the key challenges inhibiting new renewables capacity, and introduce further obstacles to investment in renewables – all of which will be paid for by energy consumers, who are already suffering from a cost-of-living crisis. In Banks view, the investment of time and capital would be better spent in effective infrastructure investment programs which would expand the grid ahead of time to reduce current and forecasted system constraints, and to adapt the current planning regime to encourage renewables investment nearer to demand. To ensure this is considered fully:

- A thorough cost benefit analysis should be conducted of the whole system and the implementation costs / risks before any changes are implemented. The cost benefit analysis should consider the impact on investor confidence in renewables (and the resulting financing implications), take into consideration the realistic ability for projects to be located in alternative locations under the current planning and grid conditions, and consider how grid reinforcement will be driven and financed. Any potential cost-benefit analysis should be compared against a

similar cost-benefit analysis of investing in grid infrastructure, which Banks believes would solve a number of the same issues nodal pricing aims to, without the economic upheaval.

Whichever form the model is implemented, it is essential that grid reinforcement is proactively deployed. A whole system approach should be taken in reviewing the energy market at a government level, beyond the remit of Ofgem, with a focus on achieving Net Zero targets. Government policy around planning and subsidies should be reviewed across the energy sector to determine how funds should be allocated to reach the goals of Net Zero in the best way for the consumer and national economy.

Yours faithfully

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